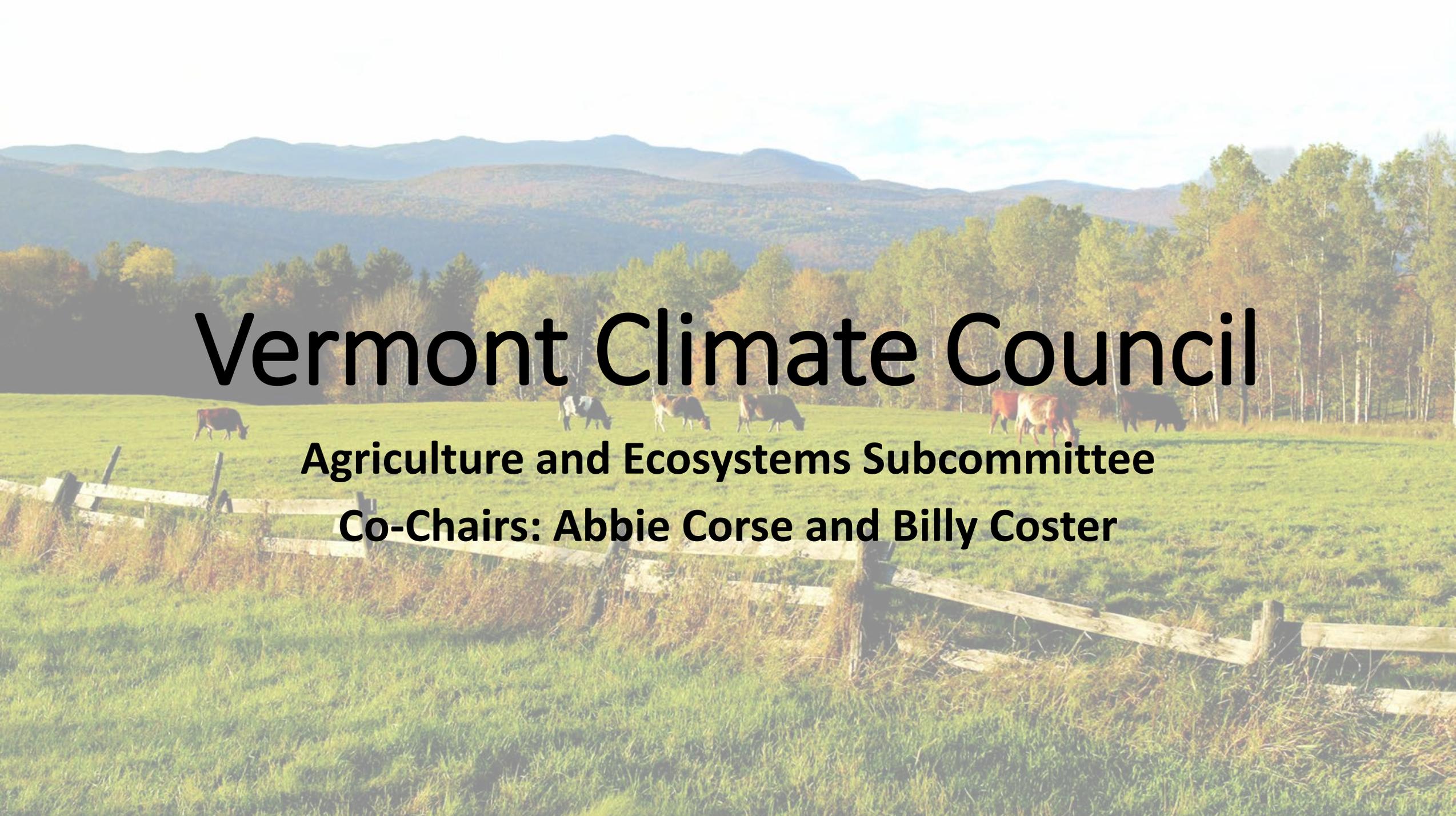


Vermont Climate Council

Building the Climate Action Plan

Initial Suite of Sectoral Pathways and Strategies

July 26th, 2021



Vermont Climate Council

Agriculture and Ecosystems Subcommittee

Co-Chairs: Abbie Corse and Billy Coster

Global Warnings Solutions Act

Vermont Climate Action Plan Requirements

1. Reduce greenhouse gas emissions from the transportation, building, regulated utility, industrial, commercial, and agricultural sectors;
2. Encourage smart growth and related strategies;
3. Achieve long-term sequestration and storage of carbon and promote best management practices to achieve climate mitigation, adaptation, and resilience on natural working lands;
4. Achieve net zero emissions by 2050 across all sectors;
5. Reduce energy burdens for rural and marginalized communities;
6. Limit the use of chemicals, substances, or products that contribute to climate change; and
7. Build and encourage climate adaptation and resilience of Vermont communities and natural systems.

Global Warmings Solutions Act

Clear Sequence of Work

1. Five Subcommittees Defined in Statute to Develop the Work
 - Rural Resilience and Adaptation, Agriculture and Ecosystems, Cross Sector Mitigation, Just Transitions and Science and Data
2. Each Subcommittee following Clear Sequence of Work
 - Inventory existing programs to meet GWSA requirements
 - Identify, analyze and evaluate new strategies/programs needed to meet GHG requirements
 - Develop financing strategies for actions ready to implement
3. Develop monitoring strategy for assessing
4. Identify rules to be adopted (by ANR) by 2022
5. Adopt the Vermont Climate Action Plan by Dec 1, 2021 and update the Plan every four years thereafter.

Framework for Climate Action Plan

Pathways → Strategies → Actions

Cross-Sector Mitigation, Agriculture and Ecosystems and Rural Resilience and Adaptation

- A **pathway** is a high-level means of achieving GHG emissions reductions or adaptation, resilience, and sequestration goals. While written broadly, pathways should be stated specifically enough so that it is possible to assess whether progress has been made in achieving them.
- A **strategy** is a statement of measurable activity, a benchmark, to be reached in pursuit of the pathway. Strategies should be measurable and are a more specific subset of pathways.
- **Actions** are the “operational” tasks that the state will undertake to meet the pathways and strategies. Actions may be written around existing, or propose new, policies, programs, projects, initiatives, plans, etc. *These will be further developed in the coming months, informed by public engagement and technical analyses.*

Leading with Equity as a Core Component

The term “Just Transitions” is a way of framing for government and business action on climate change. Its work encompasses both public policies and business action to deal with the impacts of industry transition away from greenhouse gas emissions for jobs and livelihoods (the transition “out”) and aims to generate the low or zero greenhouse gas emission jobs and livelihoods of a sustainable society (the transition “in”). [Guiding Principles for a Just Transition, June 2021](#)

Guiding Principles for a Just Transition

Inclusive, Transparent & Innovative Engagement

Accountable & Restorative

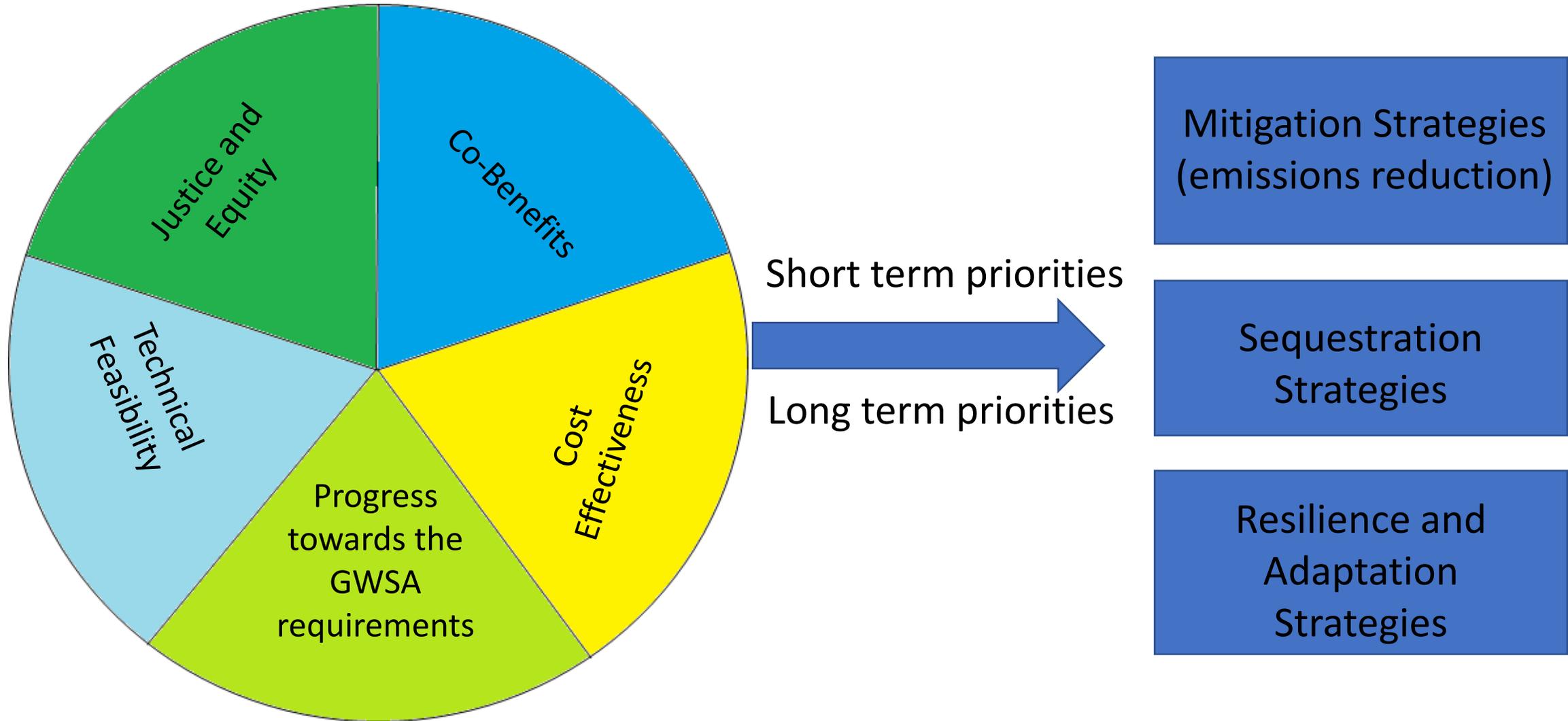
Moving at the Speed of Trust

Solidarity

The Most Impacted First

Supports Workers, Families & Communities

Climate Action Plan



Process to Date

1. Scope of Work Refined for Subcommittees
2. Subcommittee membership developed - technical expertise and diversity considered
3. Initial Ideas Explored by Task Leads
4. Presentation and Discussion
5. Pathways Presented



Agriculture and Ecosystems Subcommittee Members and Staff Support

Subcommittee Members:

- **Jake Claro**, Vermont Sustainable Jobs Fund
- **Billy Coster**, Co-Chair, ANR
- **Abbie Corse***, Co-Chair, The Corse Farm Dairy
- **Judy Dow**, Gedakina
- **Charlie Hancock**, North Woods Resource Group
- **Iris Hsiang***, Essex High School
- **David Mears**, Audubon Society
- **Lauren Oates***, The Nature Conservancy
- **Ryan Patch***, VAAFM
- **John Roberts**, Champlain Valley Farmer Coalition
- **Alissa White**, UVM

State Staff Support:

- **Alex DePillis**, AAFM
- **Alexandra Kosiba**, FPR
- **Judson Peck**, VAAFM
- **Bob Popp**, F&W
- **Marli Rupe**, DEC



Ag & Eco Process

1. Commitment to consensus
2. Subcommittee membership
 - Members of impacted communities, practitioners, subject matter/industry experts, academia
3. Task group membership
 - Councilors as Leads
 - Subcommittee members (4-5 each)
 - State staff support
4. Meetings
 - Weekly meetings of the subcommittee and task groups
 - Space for “Big Brainstorms”, identify tensions to thoughtfully engage in this work & put forth big ideas
5. Presentations
 - Judy - Traditional Ecological Knowledge (TEK)
 - UVM - Vermont Climate Assessment
 - UVM - Soil Science
 - UVM - Resilience Metrics
 - ANR/TNC - VT Conservation Design, Resilient & Connected Network

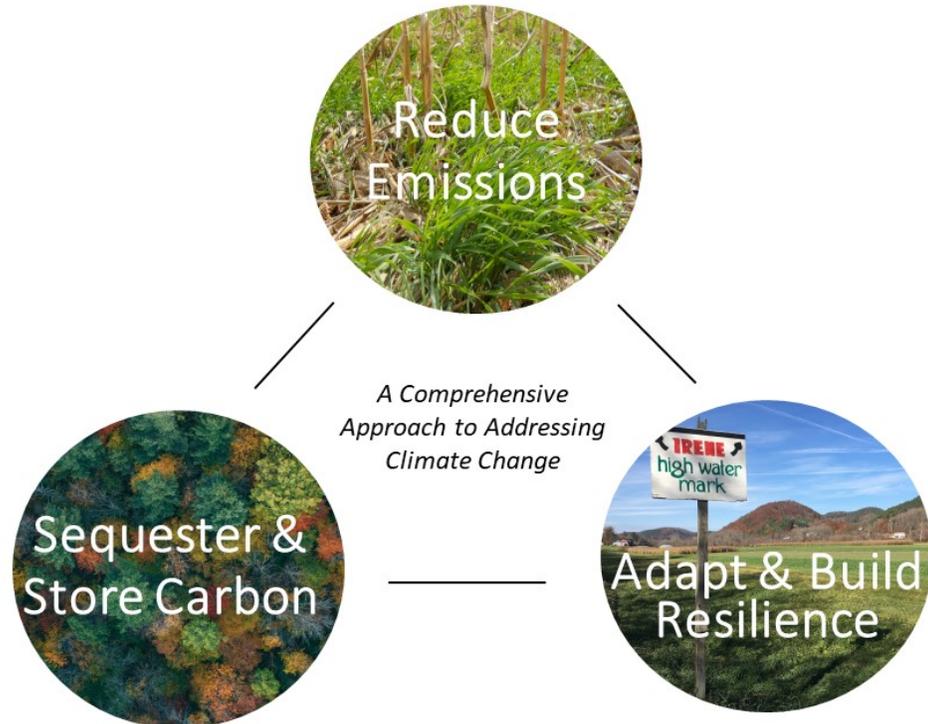


The Values Informing our Work



- Comprehensive climate action must **address and elevate climate change mitigation, adaptation and resilience**, and our natural and working lands, soils, and waters play a critical role in all three
- **Fairness to and dignity** for all living human and non-human things
- **Conservation** – of energy, land, water, soil, and ecosystems
- **Taking care** of nature and so nature can take care of us
- **Keeping working lands and Vermont’s owners, managers and stewards working**
- **Leveraging working and natural lands** as a powerful means for GHG sequestration and storage
- **Local foods**, taking appropriate responsibility for a shared, sustainable food system and providing Vermonters healthy, adequate food
- **Local forest and resources**, producing forest products and sustaining resources by and for Vermonters
- Respect, responsibility, reverence, reciprocity and relationships
- **Repairing our relationship** land, forests, waters and soil of Vermont and each other
- **Cultural humility** and honoring what we don’t know as well as what we do

Agriculture and Ecosystems Subcommittee Focus

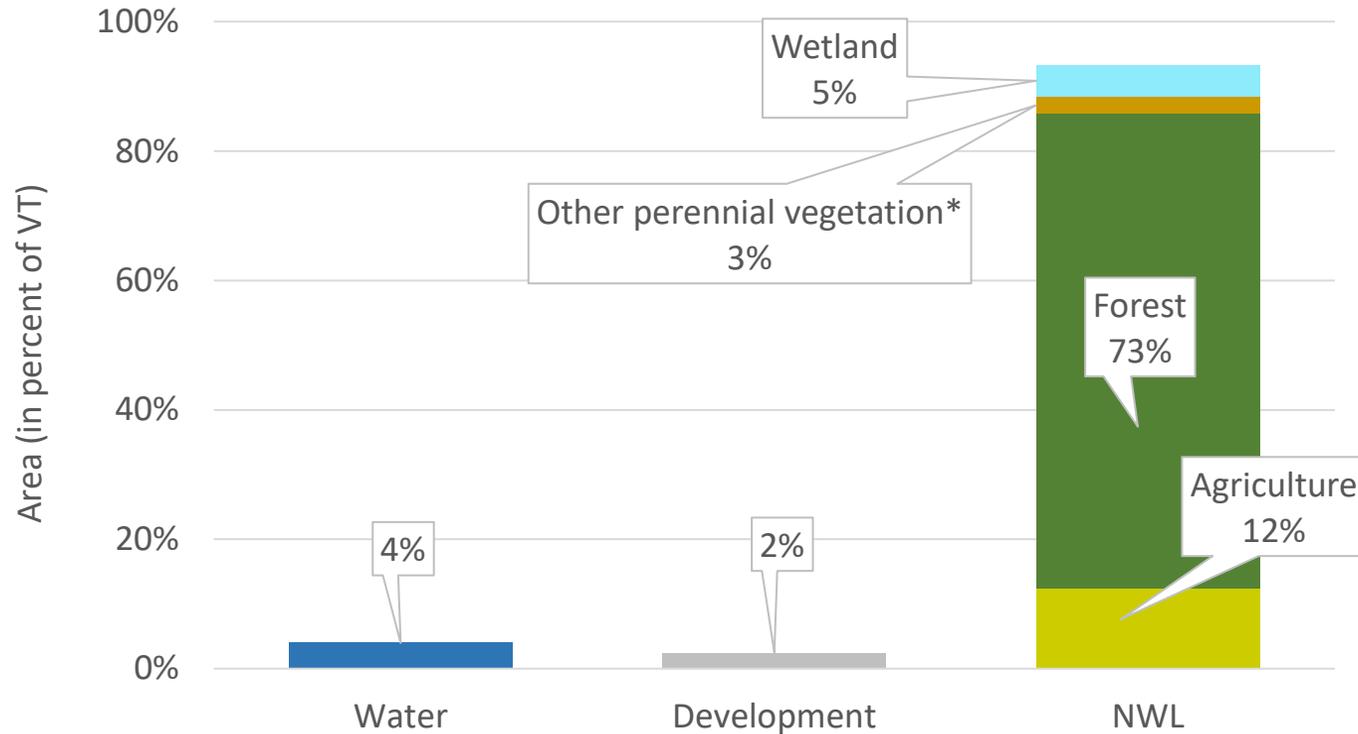


- **From statute:** *This subcommittee shall focus on the role Vermont's natural and working lands play in **carbon sequestration and storage, climate adaptation, and ecosystem and community resilience**. This subcommittee will seek to understand current initiatives in the agricultural and forestry sectors and the businesses that depend on them and to develop actions and policies that **restore wetlands; increase carbon stored on agricultural and forest land and in forest products; and support healthy agricultural soils and local food systems***

- **Focus areas:**

- Develop a carbon budget for sequestration and storage
- Decrease emissions and promote sequestration and storage in the agricultural and forestry sectors,
- Maintain or increase sequestration and storage on Vermont's natural lands
- Use nature-based solutions to improve climate adaptation and resilience
- Promote local food and forest markets/systems, food sovereignty and security, and sustainable farm, forest, & water-based economies
- Promote healthy soils, lands, and waters
- Elevate equity across all focus areas

Natural & Working Lands (NWL) cover 94% of Vermont



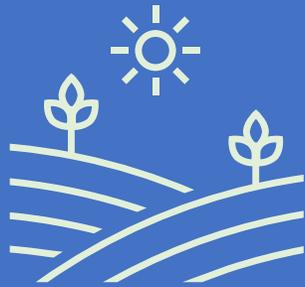
*Other perennial vegetation includes grasslands, shrub/scrublands, and turf

Technical, Modeling and Data Needs



- Subcommittee will inform and support Cadmus's work developing the carbon budget to ensure proper accounting of gross and net emissions
- Evaluation of the Greenhouse Gas Emissions Inventory protocols in relation to the carbon sequestration and storage capacities of Vermont's working lands will be critical in determining policy recommendations

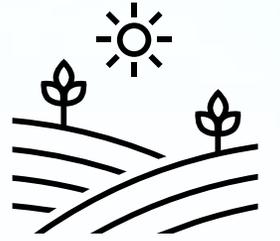
Climate Action Plan Recommendations



Agriculture & Ecosystems Pathways:

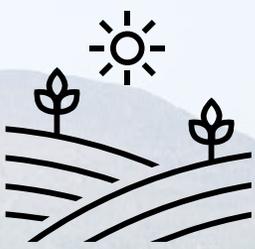
- A. Maintain and expand carbon sequestration and storage in Vermont's natural and working lands, soils, and waters
- B. Sustain, restore, and enhance the health and function of Vermont's natural and working lands, soils, and waters, which support both natural and human communities in adapting to and building resilience for climate change
- C. Support and empower Vermont's farmers, foresters, and land workers to reduce greenhouse gas emissions from their operations
- D. Support and empower Vermont's natural and working lands owners, managers, and caretakers to enhance farm and forest viability and make informed decisions to increase resilience and adaptation to climate change
- E. Grow and connect local, sustainable natural and working lands economies, markets, and food systems, and provide equitable access to them
- F. Shape land use and development that support landscape scale carbon sequestration and storage, climate resilience and adaptation, and natural and human communities for a sustainable and equitable future
- G. Create accessible, equitable research, partnerships, and education, promote shared understanding, and invest in sustainable and equitable workforce development for the sectors that depend on and benefit from natural and working lands, soils, and waters

Sustain and expand carbon sequestration and storage in Vermont's natural and working lands, soils, and waters



FOR EXAMPLE

- Develop and implement programs to **maintain or increase forest carbon storage**, track carbon sequestration benefits of forestry and track forest carbon offsets
- Promote and **incentivize forestry and other land and water practices** that maintain or increase carbon storage
- Support **research efforts** to track forest fragmentation, parcelization, and land conversion
- **Increase tree coverage** (e.g. incentivize forested buffers, promote pay-for-practice programs, expand municipal tree planting/forests, reduce roadside mowing, incentivize agroforestry)
- Leverage, expand, and adapt **existing State of Vermont programs** that support agricultural GHG emission reduction and agricultural soil carbon sequestration (e.g. FAP, BMP, RAPs)
- Increase adoption of **agronomic and grazing practices** on farms such as no-till, cover crop, and rotational grazing
- Develop and implement a **State of Vermont PES Program** that supports the development of healthy soils and carbon sequestration



Sustain, restore, and enhance the health and function of Vermont's natural and working lands, soils, and waters, which support both natural and human communities in adapting to and building resilience to climate change

FOR EXAMPLE

- Expand funding and incentives for the **conservation of farmland, forests and wetlands**, and for the restoration of wetlands, riparian areas and floodplain forests
- Conserve, protect and restore **old forests**
- Use tools like **Vermont Conservation Design** to strategically prioritize conservation of lands and water for range of goals (biodiversity, connectivity, etc.)
- Promote and incentivize **Climate-Adaptation Forest Management Practices**
- Strategically involve the private sector to **leverage capital** in support of nature-based solutions and traditional ecological knowledge efforts
- Expand practices supported through FAP and CREP to include practices that **increase soil organic matter** (including compost application), pollinator habit creation/enhancement, hedgerow/windbreak/shelterbelt establishment, and improve water resources
- Improve and incentivize **river corridor and floodplain reconnection** and restoration (e.g. incentivize riparian buffers, invest in berm removal, expand FHARC to include statewide RC jurisdiction)
- **Ensure natural resource restoration practices** which support climate mitigation and resilience, including existing program strategies, including river corridor easements, wetland restoration, and afforestation practices.

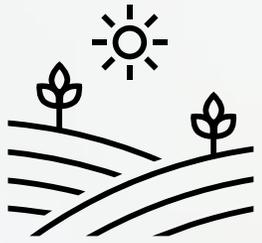
Support and empower Vermont's farmers, foresters, and land workers to reduce greenhouse gas emissions from their operations



FOR EXAMPLE

- Increase technical assistance, capacity and resources to **support private and municipal forestland owners, planners and managers** for climate change adaptation and intergenerational transfer.
- Include **Tribal members, TEK, youth** in resource management planning.
- Provide greater support and capacity for **energy transformation** on working lands enterprises for greater efficiency and increased business viability.
- Update State of Vermont **Emissions Inventory** to include net emissions to account for sequestration of carbon in agricultural soils and Vermont's other natural and working lands.
- Leverage, expand, and adapt existing State of Vermont programs that support **agricultural GHG emission reduction** and **agricultural soil carbon sequestration** including: methane capture and energy generation on farms and development of a climate feed management program and grazing and agronomic practices

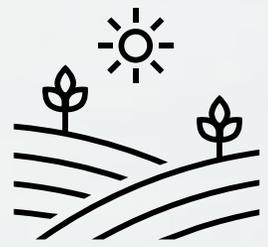
Support and empower Vermont's natural and working lands owners, managers, and caretakers to enhance farm and forest viability and make informed decisions to increase resilience and adaptation to climate change



FOR EXAMPLE

- Enhance and support **technical assistance** to farmers (e.g. fully fund UVM Extension), landowners (e.g. fund climate adaptation training through FPR's Forests & Climate program), and municipalities (e.g. fully implement Act 171)
- Support **research and development** efforts and expansion of new markets and opportunities for wood product processing and manufacture in Vermont.
- Support robust funding for **Working Lands Enterprise Initiative and viability initiatives** and prioritize funding to businesses that have climate/low carbon goals.
- Investment in **farm and forest viability** planning and technical assistance.

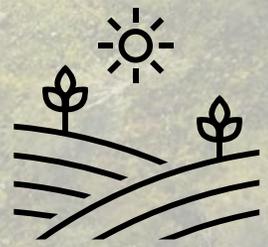
Grow and connect local, sustainable natural and working lands economies, markets, and food systems, and provide equitable access to them



FOR EXAMPLE

- Promote **workforce development** in all working lands sectors.
- Develop, expand, and **sustain local markets specifically for food, agricultural, and forest products**, including investment in infrastructure, distribution, and market development (while strengthening supply chains and associated infrastructure to support them, including robust funding for WLEI), including promoting and incentivizing local wood products
- Support proven ways to **alleviate food insecurity** and create a Local Food Access Funding Program to support low-income consumers in purchasing or accessing more local food
- Ensure and increase **equitable access** for people who are historically underserved/disadvantaged
- Expand **locally grown, carbon friendly, and equitable access** to food supply and sources
- Develop, endorse and implement **fair trade and equitable labor practices** for the natural and working lands sector

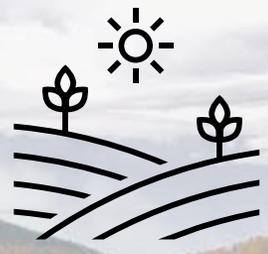
Shape land use and development that support landscape scale carbon sequestration and storage, climate resilience and adaptation, and natural and human communities for a sustainable and equitable future



FOR EXAMPLE

- **Update Act 250** and other state land use regulations and planning tools to include climate change criteria and better combat forest fragmentation and forest loss, to incentivize growth in the state's designated centers and better address the specific challenges to working lands enterprises
- Explore a state policy of '**net forest gain**'
- **Protect agricultural farmland** from development
- **Minimize the impacts of new renewable energy** generation plants on forests and natural land by incentivizing or requiring siting at other locations
- Increase the amount of land and water conserved through the **30 x 30 program**
- Promote **statewide landscape connectivity planning and reduce forest fragmentation** (e.g. join 30x30 initiative, develop statewide land use plan, prioritize VCD in state program prioritization frameworks, promote Compact Settlement, engage with federal forest managers)
- **Revise state land management** to prioritize sustaining and enhancing biodiversity and functioning natural communities (e.g. promote biodiversity as primary objective for state lands, municipal lands and parcels in UVA)
- Create an **Interagency Office of Climate** to coordinate implementation of climate change action across agencies

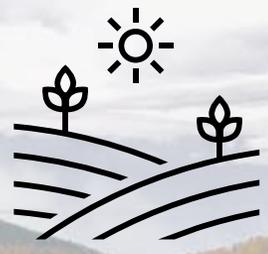
Create and support accessible, equitable research, partnerships, and education, promote shared understanding, and invest in sustainable and equitable workforce development for the sectors that depend on and benefit from natural and working lands, soils, and waters



FOR EXAMPLE

- **Elevate the role TEK** plays in climate adaptation and resilience and incorporate TEK into state-led climate assessments, planning efforts, and prioritization frameworks (e.g. agroforestry)
- Promote **workforce development** in the working lands sector along all points of the supply chain
- Enhance **education, outreach, and technical assistance** programming to support farmer learning and adoption of **climate smart agricultural practices** and ensure equitable access.
- Fund and learn from **local academic institutions, researchers and applied research**
- **Coordinate with federal NRCS cost-share programs** to elevate climate mitigation practices in Vermont (e.g. silvopasture)
- **Expand environmental and climate education** at all grade levels and promote understanding to preserve plant communities and enhance biodiversity and resilience through information and technical assistance to landowners and caretakers

For more detail and depth from our Subcommittee:



- https://aoa.vermont.gov/sites/aoa/files/Boards/VCC/Task%205e%20Pathways_7.2.21.pdf
- https://aoa.vermont.gov/sites/aoa/files/Boards/VCC/Task%205D%20Pathways_7.2.21.pdf
- <https://aoa.vermont.gov/sites/aoa/files/Boards/VCC/Forest%20and%20Natural%20Land%20Task%205b%207.2.21%20slides.pdf>
- <https://aoa.vermont.gov/sites/aoa/files/Boards/VCC/GWSA%20VCC%20Ag%20and%20Ecosystem%20Subcommittee%20Subtask%20Group%205C%20Recommendations%206-24-21.pdf>

Final Point to Leave with the VCC



**Comprehensive climate action must
address and elevate our natural and
working lands, soils and waters as critical
for all three of climate change mitigation,
adaptation and resilience**